

**FROM THEORY TO PRACTICE (AN OVERVIEW OF TOBACCO CESSATION)*****Dr. Sudeep C.B.**

Assistant Professor, Department of Public Health Dentistry, Sree Anjaneya Institute of Dental Sciences, Kerala, India.

Article Received on 09/12/2016

Article Revised on 29/12/2016

Article Accepted on 19/01/2017

Corresponding Author*Dr. Sudeep C.B.**

Assistant Professor,
Department of Public
Health Dentistry, Sree
Anjaneya Institute of
Dental Sciences, Kerala,
India.

ABSTRACT

Dependence on any psychoactive substance is a chronic disorder, characterized by a loss of control over its use, by a compulsive desire to consume it, and a relative inability to go without it. Tobacco smoke correspondingly contains thousands of compounds, many of which may contribute to the establishment or maintenance of tobacco dependence. Of these compounds, nicotine is the constituent of tobacco that is most incriminated for its addictive potential. Tobacco

dependence is not only characterized by the adverse effects of nicotine- the expectation of both pleasure and psychological relief, but also by the withdrawal syndrome when smoking is stopped. Modern approaches to treating tobacco use and dependence should reflect the chronic nature of tobacco dependence. Health care organizations now provide structured smoking cessation services, recognizing the value of this health maintenance intervention. Effective interventions exist that can produce long-term cessation at up to double the rate achieved by smokers without treatment. It is important for clinicians to know that assessing and treating tobacco use generally leads to greater patient satisfaction with health care, members of the dental profession also have a unique opportunity to influence tobacco use by their patients.

KEYWORDS: Tobacco, Dependence, Cessation, Nicotine, Addiction.

INTRODUCTION

Cigarette smoking and other forms of tobacco use impose a large and growing global public health burden. Responsible for almost 5 billion deaths per year worldwide, it is one of the

major causes of premature deaths.^[1] Tobacco smoke is harmful not only to smokers but to non-smokers as well. At least 250 of the 4,000 chemical substances found in tobacco smoke are considered harmful, with over 50 being carcinogenic.^[2]

Conditions proved to be related to tobacco smoking include cancer such as lung cancer and cancers of the esophagus, larynx, stomach, kidney, bladder, uterine cervix and acute myeloid leukemia; chronic obstructive pulmonary disease (COPD); and cardiovascular disease.^[2] Recent investigations have also identified the use of tobacco as a constant behavioral risk factor for poor dental health.^[3] It causes a reduction in the gingival blood flow with a decreased number of circulating cells and less oxygen reaching the gingiva, thus weakening its defense reparative posture.^[4] In addition, smoking has a strong association with fire-related and trauma-related injuries.^[5] *Thus, Cigarette smoking and other forms of tobacco use impose a large and growing global public health burden.*

Dependence on any psychoactive substance is a chronic disorder, characterized by a loss of control over its use, by a compulsive desire to consume it, and a relative inability to go without it.^[6] Tobacco smoke correspondingly contains thousands of compounds, many of which may contribute to the establishment or maintenance of tobacco dependence. Of these compounds, nicotine is the constituent of tobacco that is most incriminated for its addictive potential.^[1]

The local sensory effects of the cigarette, whether due to the smoke, tobacco, its constituents, or menthol in mentholated cigarettes represent a set of stimuli that forms part of the conditioned reinforcement of the smoker. When associated with repetitive, compulsive behavior, this contributes to the establishment of the positive reinforcing circuits and help to maintain tobacco dependence.^[1]

Furthermore, tobacco dependence is not only characterized by the adverse effects of nicotine—the expectation of both pleasure and psychological relief, but also by the withdrawal syndrome when smoking is stopped. Previous epidemiological studies suggest that the rate at which persons — primarily children and adolescents — become daily smokers nearly matches the quit rate. Seventy percent of smokers say they would like to quit, and every year, 40% do quit for at least 1 day. Some highly addicted smokers make serious attempts to quit but are able to stop only for a few hours. Moreover, the 80% who attempt to quit on their own return to smoking within a month, and each year, only 3% of smokers quit successfully.^[5]

Thus, for most smokers, an attempt to achieve long-term abstinence results in failure. To improve outcomes, medications, counseling, and education have become the standard of care for smoking cessation treatment. Health care organizations now provide structured smoking cessation services, recognizing the value of this health maintenance intervention.^[7]

Indeed, smoking cessation treatment has become a service that primary care providers are widely expected to deliver, which may be tracked as a quality measure in many health care organizations.

HISTORY OF TOBACCO CESSATION

The tobacco plant, *Nicotiana*, has probably been responsible for more deaths than any other herb. At present, tobacco smoking is causing over 3 million deaths a year worldwide, and if current smoking trends continue the annual mortality will exceed 10 million by around 2030.^[8] Add to this the mortality from cancers caused by oral uses and the death toll becomes still higher. Undoubtedly, tobacco is the most important avoidable cause of premature death and disease in the world.

Tobacco leaves and the smoke generated when they are burned contain over 4 thousand chemicals, the best known of which is nicotine, first isolated from tobacco leaves in 1828 by Posselt and Reimann.^[3] It is the nicotine that causes smokers to become addicted to tobacco, and the chemical itself is lethal in small doses.^[9]

The evidence that tobacco causes cardiovascular disease and lung disease took several hundred years to emerge. In the 15th century, when the use of *Nicotiana* by the indigenous populations in the New World was first observed by Columbus and the plant was brought to Europe, all herbs were considered to have potential therapeutic properties and this new one was used to treat a wide range of conditions. Indeed, *Nicotiana* acquired a reputation as a panacea, to the extent of being called the 'holy herb' and 'God's remedy'. Even though the ill effects of tobacco use were acknowledged in early 1600s, it was in 1761 that Dr. John Hill performed the first ever clinical study relating tobacco use to vulnerability to cancer. Similar findings were noted by Dr. Michael Debakey in 1941.^[10]

The concern against tobacco was further strengthened by the lawsuit brought against the U.S. Tobacco company which brought national publicity to the growing consumption of not just cigarettes but smokeless tobacco products as well. "The Reemergence of Smokeless

Tobacco,” proved to be a landmark overview article published in the New England Journal of Medicine by Dr. Gregory Connolly and colleagues, summarizing the resurging popularity of smokeless tobacco (primarily moist snuff), particularly among male adolescents and broadened the awareness of oral health tobacco issues among other health professionals.^[11]

Consequently, a report on the health consequences of the use of smokeless tobacco was submitted to the U.S. surgeon General C. Everett Koop, M.D., who brought the full power of his office to bear on smokeless tobacco use as well as on smoking. He is also credited on bringing dentistry into the tobacco-use control movement. In time, The Comprehensive Smokeless Tobacco Health Education Act of 1986 was stimulated by the 1986 National Institutes of Health Consensus Development Conference on the Health Implications of Smokeless tobacco.^[11]

The conference was convened by the National Cancer Institute (U.S.), the National Institute of Dental Research (U.S.), and the National Institutes of Health (NIH) Office of Medical Applications of Research (U.S.).

The act’s major provisions were.

- Development and implementation of public health education programs and materials about the risks involved in using smokeless tobacco products;
- Inclusion of a health warning on all smokeless tobacco products and advertisements for them;
- Authorization of research on the effects of smokeless tobacco.

In addition, in the year 1987 the World Health Assembly of the WHO passed Resolution WHA40.38, calling for April 7, 1988 to be "a world no-smoking day". The objective of the day was to urge tobacco users worldwide to abstain from using tobacco products for 24 hours, an action they hoped would provide assistance for those trying to quit. In 1988, Resolution WHA42.19 was passed by the World Health Assembly, calling for the celebration of World No Tobacco Day, every year on May 31. Since then, the WHO has supported World No Tobacco Day every year, linking each year to a different tobacco-related theme.

Another similar landmark was The First International Conference on Smokeless Tobacco, held in Columbus, Ohio, in 1991, which brought together people from areas of smokeless tobacco research, health education, addiction, cessation, public health and health policy.^[11]

Comprehensive bans on smoking in workplaces and indoor public areas also appear to have had an effect. The main reason for introducing such bans is to protect the health and comfort of non-smokers, but bans can clearly motivate smokers to try to stop and may make it easier for them to succeed.

What is known as the first modern attempt at restricting smoking was imposed by the German government in every university, post office, military hospital, and Nazi Party office, under the auspices of Karl Astel's Institute for Tobacco Hazards Research, created in 1941 under orders from Adolf Hitler. Major anti-tobacco campaigns were widely broadcast by the Nazis until the demise of the regime in 1945.

On April 3, 1987, the City of Beverly Hills, California, in response to the anti-tobacco movement, initiated an ordinance to restrict smoking in most restaurants, in retail stores and at public meetings following which, in 1990, the city of San Luis Obispo, California, became the first city in the world to restrict indoor smoking in all public places, including bars and restaurants. The role of smoke free environment was soon followed by major cities across the globe- in New York (2003), Ireland, Norway and New Zealand (2004), Cuba, Bangladesh and Malta (2005), Scotland, Uruguay and Bermuda (2006), Wales, Northern Ireland and finally England in 2007.

In India, Chandigarh became the first city to endeavor to become smoke-free on July 15, 2007. However, poor compliance has been reported in Kolkata. Education and persuasion have probably played a major role in decreasing smoking prevalence in some countries. Warning labels on packaging and promotional material is another approach that is common place. A direct effect on prevalence following the introduction of warning labels has not been detected, but recent evidence suggests that pictorial warnings may have some impact.

The year 1965-66 first saw Television cigarette advertisements taken off the air in UK and the appearance of health warnings on cigarette packs. In April 1970, the United States Congress passed the Public Health Cigarette Smoking Act banning the advertising of cigarettes on television and radio starting on January 2, 1971.

Moreover, the Tobacco Advertising Prohibition Act 1992 expressly prohibited almost all forms of Tobacco advertising in Australia, including the sponsorship of sporting or other cultural events by cigarette brands. All tobacco advertising and sponsorship on television has

been banned within the European Union since 1991 under the Television without Frontiers Directive (1989).

Some countries also impose legal requirements on the packaging of tobacco products. For example in the countries of the European Union, Turkey, Australia and South Africa, cigarette packs must be prominently labeled with the health risks associated with smoking. Canada, Australia, Thailand, Iceland and Brazil have also imposed labels upon cigarette packs warning smokers of the effects, and they include graphic images of the potential health effects of smoking. Cards are also inserted into cigarette packs in Canada. They explain different methods of quitting smoking.

Anti-smoking groups, particularly cancer charities, along with many government health departments have attempted to counter the advertising of tobacco by creating their own advertisements to highlight the negative effects of smoking. The earliest commercials mainly focused on aiding smoking cessation, the increased risk of lung cancer and the problems associated with passive smoking. The British government spent £31 million in 2003 as part of their anti-smoking campaign. In 2005 the European Union launched the "For a life without tobacco" campaign in all its constituent countries to help people quit smoking. In 2007 and 2008, the New York City Department of Health launched a series of anti-tobacco ad campaigns.

The Marlboro Man was one of the most successful cigarette advertising campaigns, lasting from the 1960s to the 1990s. The Marlboro brand was promoted by various cowboys, with Wayne McLaren posing for some promotional photographs in 1976. He died of lung cancer in 1992, having appeared in a television spot showing him in a hospital bed. That image was juxtaposed with him during the promotional shoot, with a voiceover warning about the dangers of smoking.

Taxation has become another effective method of tobacco control. Increasing the price of tobacco through higher taxes is the single most effective way to decrease consumption and encourage tobacco users to quit. In 1794, secretary of the treasury Alexander Hamilton introduced the first ever, federal excise tax on tobacco products. Hamilton's original proposal passed after major modifications, only to be repealed shortly thereafter with an insignificant effect on the federal budget. Even though Hamilton's tax on tobacco failed, tobacco taxation continued to play an important role in American history. Soon after, many governments

introduced excise taxes on cigarettes in order to reduce the consumption of cigarettes. Even WHO recommends all government raise taxes. All tobacco products should be taxed similarly and need to be regularly adjusted for inflation.

Another contributor to declining smoking rates is the ongoing improvement in smoking cessation techniques and medications. Alternative methods of delivering nicotine via tobacco have been available for centuries in the form of chewing tobacco, snuff, drinks, enemas, and percutaneous administration—all developed by the aboriginal peoples of North and South America. In 1942, Johnston administered nicotine intravenously to himself and 34 volunteer's thus altering smoking behavior in recipients. Further development of alternative nicotine delivery took another 30 years with the development of nicotine chewing gum. This was followed by transdermal, nasal, and oral nicotine vapor inhalers. These Alternative Nicotine Delivery Systems (ANDS) were developed to decrease the craving of tobacco withdrawal and improve abstinence.^[12]

Many studies confirm the ability of these systems to improve 'quit rates' although their impact on long-term tobacco abstinence is modest. In a similar context, the United Kingdom was the first country to introduce a national smoking cessation treatment program in 2000, funded through general taxation. Other countries have since followed suit, including Japan and Taiwan. Another global effort against the threat from tobacco has been the Framework Convention on Tobacco Control (FCTC). This is the first ever global health treaty. It represents a landmark achievement that, if ratified and implemented, would without question prevent suffering and premature death of millions of people over the coming decades.

The following points summarize the main national obligations set out in the treaty.

Signatories will

- ban the promotion of tobacco products
- require large health warnings on all tobacco product packaging
- ban deceptive labeling such as 'low tar'
- ban smoking in indoor public areas and workplaces
- implement specific measures to combat tobacco smuggling
- consider using taxation as a means of reducing tobacco consumption
- regulate toxin delivery by tobacco products
- require disclosure of tobacco product ingredients

- consider litigation to make tobacco companies pay for the harm caused by their products
- endeavor to include tobacco cessation treatment in national health programs
- seek to prohibit distribution of free tobacco products
- prohibit sales of tobacco products to minors

To date, 168 countries have signed the treaty, and 137 have ratified it. At the time of writing, countries that have signed but not ratified it include Haiti and the United States. Immense achievement as it has been to get this far, the impact of the treaty will be marginal without an even greater effort to ensure that its provisions are implemented in accordance with the spirit and not just the letter of its articles.

Thus, Specific tobacco levies in every country should be the primary means of kick-starting the process, with the proceeds being used exclusively to fund other tobacco control initiatives, including product regulation.

COLD TURKEY

One of the most popular and well-known ways smokers choose to quit smoking is what is known as "cold turkey." The phrase cold turkey is universally understood to mean to quit smoking abruptly, often without forethought or preparation, nor a gradual reduction in amount smoked.

Most people also assume cold turkey means to quit smoking without using any smoking cessation aids such as nicotine gum or patches. Population studies consistently show that a large majority of smokers who permanently stop smoking do so without any form of assistance. In 2003, some 20 years after the introduction of cessation pharmacotherapies, smokers trying to stop unaided were twice as numerous as those using pharmacotherapy.^[13]

Today, unassisted cessation continues to lead the next most successful method (Nicotine Replacement Therapy [NRT]) by a wide margin.^[14] Many smokers try to quit abruptly, some for seemingly trivial reasons (for example, thunderstorm preventing the purchase of a pack of cigarettes) and remain abstinent for years. The findings appear to contradict a basic assumption of the trans-theoretical model of behavior change which positions discrete stages in the process of quitting.^[15]

PHARMACOLOGICAL TREATMENT FOR TOBACCO CESSATION

Numerous factors should be taken into consideration when developing a rational approach to the treatment of tobacco cessation.^[16] First, the objective of the treatment needs to be established: namely, stop using tobacco completely. Then, the appropriate medication needs to be identified to achieve this objective. The medication needs to be matched to the pathophysiology of the disease. Finally, the optimal dosing regimen must be selected. Moreover, the therapeutic outcome should be assessed periodically, and therapy adjusted to provide optimal benefits with minimal risk.

The use of nicotine in tobacco cessation

The severity of withdrawal symptoms after quitting tobacco, that patients find distressing, and in some cases unacceptable, can be reduced by nicotine replacement therapy (NRT); the urge to consume tobacco is thereby reduced. However, patients using any form of NRT must be highly motivated and prepared to stop smoking immediately. Ideally, they should be supported and counseled by their health care provider. But it must be recognized that even when abstinence for several months has been achieved, the risk of relapse remains high.^[16]

Nicotine Patches - Transdermal nicotine delivery systems were approved by the US Food and Drug Administration (FDA) in 1991 as an adjunct to physician support for smoking cessation.^[126] In recent years, patches of various designs and differing pharmacokinetic actions have become available. The low-dose patches are designed to produce blood nicotine levels that are lower than those resulting from smoking. The rate of nicotine absorption is maximal between 6 and 12 hours after application, with an absolute bioavailability of about 82%.^[17]

Nicotine Gums - Approved by the FDA in 1984 and now widely available on an over-the-counter basis, the nicotine strengths of the gums (nicotine polacrilex, nicotine resin complex) are 2 mg (1.4 mg nicotine extracted) or 4 mg (3.4 mg nicotine extracted). It is recommended that normally 9 to 12 pieces of gum should be chewed daily, but the maximum can be 20 to 30 pieces.^[126] Unlike normal chewing gum, each piece should be chewed intermittently for about 30 minutes to allow absorption through the buccal mucosa. One piece of gum should provide nicotine replacement for 1 to 2 hours, but an additional piece may be chewed during the hour if a strong craving arises.^[18]

Nicotine Lozenges - Nicotine lozenges may be suitable for a patient who prefers oral NRT but is intolerant of gum. An over-the-counter nicotine lozenge was approved by the FDA in 2002. In a placebo-controlled clinical trial, lozenges containing 2 and 4 mg nicotine were shown to be effective, with side effects similar to those of nicotine gum.^[19]

Nicotine Nasal Spray - Nicotine nasal spray is approved for clinical use as an aid to smoking cessation and for the relief of nicotine withdrawal symptoms.^[20] One dose consists of 2 squirts (1 in each nostril), each squirt delivering 0.5 mg nicotine.^[21]

Nicotine Inhaler - The nicotine inhaler became available by prescription in 1998 and was developed to mimic the hand-to mouth ritual. Users may need to inhale vigorously and frequently to achieve a 30% replacement of blood nicotine levels; 80 deep puffs deliver 4 mg of nicotine.^[21]

Non-Nicotine Preparations

Varenicline - a nicotine receptor partial agonist is the most recently developed non-nicotine preparation. The novel prescription drug for smoking cessation received FDA approval in May 2006 after a priority FDA review because of its significant potential benefit to public health.^[22]

Bupropion – which is available in 2 sustained-release forms and a generic form. It is an atypical antidepressant with dopaminergic and adrenergic actions, and was originally marketed for the treatment of depression.^[22]

Clonidine - a α_2 adrenergic agonist developed originally as an antihypertensive agent, but it has also been recommended for the treatment for chronic pain syndromes, opiate or alcohol abuse withdrawal, and other neuropsychiatric conditions. Clonidine suppresses the acute symptoms of nicotine withdrawal, such as tension, irritability, anxiety, cravings, and restlessness.^[23]

Nortriptyline - a noradrenergic tricyclic antidepressant that can have a beneficial impact on nicotine withdrawal symptoms. It is not approved currently by the FDA for nicotine dependence and should be considered only as second-line treatment for smoking cessation.^[23]

Selective Serotonin Reuptake Inhibitors - used to treat depression and anxiety and to regulate mood. After stopping smoking, many people experience mood changes resembling subclinical depression. It is theoretically possible; therefore, that SSRIs such as fluoxetine, paroxetine, or sertraline may help patients overcome these symptoms.^[22]

Monoamine Oxidase Inhibitors - Animal and human studies have shown that exposure to tobacco smoke reduces the levels of monoamine oxidase in the brain. The reversible monoamine oxidase type A inhibitor moclobemide, when given as an aid to smoking cessation in heavily dependent smokers in a preliminary study and proved successful; however, study subjects tended to experience insomnia and dry mouth.^[24]

Rimonabant - Endocannabinoid receptors have recently been implicated in nicotine addiction; hence, drugs affecting cannabinoid receptors may aid in smoking cessation. The selective cannabinoid-1 receptor blockers are thought to modulate systems in the brain that are altered by cigarette smoke. Rimonabant is the first cannabinoid-1 receptor blocker approved for use and is currently available in the United Kingdom as an anti-obesity drug.^[22] Clinical trials are in progress regarding its use in smoking cessation.^[24]

SELF HELP

Recent research has suggested that practicing small acts of self-control can lead to an improvement in self-control performance. Because smoking cessation requires self-control, it was hypothesized that a treatment that builds self-control should help in quitting smoking.^[25]

It has already been established that Individuals who practiced self-control remained abstinent longer than those who practiced tasks that did not require self-control. Supplemental analyses suggested that the increased survival times were a product of building self-control strength and were not produced by changes in feelings that practicing should help in cessation, effort exerted on the practice task, or thinking more about self-control while practicing.^[26]

Self-control is critical to the success of smoking cessation. That is, individuals who are trying to quit smoking and who fail to inhibit their urges, desires, or temptations to smoke may suffer a lapse and return to smoking. There are many successful programs that help individuals quit smoking by reducing the strength of their urges or by teaching them to better deal with temptations. The self-control strength model proposes that it may be possible to increase people's capacity for self-control.^[26]

In the short term, it has been found that exerting self-control depletes this limited resource and hence results in poorer self-control performance. Consistent with the contention that there is a universal self-control resource, multiple studies have found that many forms of exerting self control result in poorer self-control on a variety of subsequent.^[27]

In the long term, however, the self-control strength model predicts that the regular practice of small acts of inhibiting or stopping moods, urges, thoughts or feelings when interspersed with rest should increase self-control reserves.^[28] Hence, the particular self-control task being practiced is unimportant, provided it requires the individual to inhibit a response. *If this is indeed the case, this could lead to a potent intervention to help individuals quit tobacco.*^[29]

BEHAVIORAL COUNSELING

Counseling is a collaborative process in which the counselor assists the client in facilitating behavior change, enhancing coping skills, promoting decision making and improving relationships. Tobacco use decreases when patients receive counseling from a health care provider. Physicians and other primary health care personnel are valuable and effective in the management of individuals with tobacco cessation. The physician has the influence, as a credible expert in a position of authority, to suggest and advise patients to quit tobacco use.

Patients, who are willing to quit tobacco, should be provided with treatments identified as effective. However, for those who are unwilling to try and quit tobacco, interventions should be designed to increase their motivation to quit. Under these circumstances, patients undergo a series of stages of willingness and preparedness to quit. At each stage a person is thinking and feeling differently about the tobacco use habit.

These 5 stages are described below which can be categorized as.^[30]

Stage-1) Pre-contemplation

Here a person is not thinking about quitting, they are not interested in change. This is because.

- i.) They do not see their smoking habit as a problem.
- ii.) They think that Tobacco is infact helpful and beneficial, that it helps them in concentration, in digestion, or for relaxing.
- iii.) They may be fully aware of the risks but may value tobacco use for other reasons that thus do not wish to stop.

iv) Unaware of help available and previous failed attempts at changing make them believe they cannot stop.

Stage-2) Contemplation

Here the patient knows the risks and problems, but is undecided and is unaware of the benefits on quitting smoking. In this stage the person is torn two ways, i.e., aware that he ought to stop but still feeling attached or drawn to smoking.

Stage-3) Preparation stage

Here the patient expresses a desire to quit. Those in preparation stage are planning to take action soon. They are beginning to make small changes and trying out different ways of behaving. They may tell others about their intention to stop and make clear plans on how they are going to do it.

Stage- 4) Action stage

Here patient makes visible changes and puts considerable effort for leaving the habit. This is often the time when they seek professional help.

Stage-5) Active period

During this stage, quit status is continued and strengthened, temporary stoppage becomes part of a more settled pattern. Unless this takes place the person may move into relapse, and return from there to pre-contemplation or contemplation stage.

It may be noted that a person may move from one stage to another in the forward or backward direction and may require continuous effort to move towards the direction to quit smoking. The emphasis of all the above points is to make the patients aware that tobacco use is affecting their physical health, family and social life. The guiding principle here should be to involve the patient in discussion and providing information on the consequences and risks of tobacco use.

HYPNOTHERAPY

Hypnosis can be defined as an altered state of consciousness in which a person is able to bypass certain aspects of reality, tolerate logical inconsistency, experience distortions of perception and memory as real, and feel a compulsion to follow cues from an outside source.^[31] The essential elements of hypnosis include the use of suggestion, focused attention (absorption), and the therapeutic relationship to alter a person's behavior, thoughts, and/or

emotional state. Out of non drug therapies, hypnotherapy has been widely used as a method for helping in smoking cessation and also holds promise for encouraging the quitting of various forms of smokeless tobacco.

PUBLIC HEALTH MEASURES

The globalization of tobacco began more than 500 years ago, but the public health response to the death, disease, and economic disruption that it has caused is fewer than 50 years old. With the scientific debate about the link between tobacco and disease conclusively established, a new phase in the tobacco-disease continuum began: the public health response to this now-recognized epidemic. Because tobacco was more common in the Western, industrialized countries, the earliest and most visible public health efforts to contain the tobacco use epidemic took place in those regions.

Globally, the data are very clear in indicating that the tobacco epidemic has now expanded to, and become more focused on, the world's low- and middle-income countries. Although the sharply increasing tobacco use prevalence rates in these regions is a cause for considerable alarm, the deadly experience of the high income nations need not be wholly repeated. Resources not available in the mid-1960s now abound, the most significant being, the World Health Organization (WHO)'s brilliant Framework Convention on Tobacco Control (FCTC).

The idea of an international instrument for tobacco was initiated with the adoption of Resolution WHA 48.11 in May 1995, requesting the Director-General to report to the Forty ninth Session of the World Health Assembly on the feasibility of developing an international instrument such as guidelines, a declaration, or an international convention on tobacco control. As a result of Resolution WHA48.11, WHO was requested to draft a feasibility study which was presented by the Director-General to the Ninety-seventh Session of the WHO Executive Board ("The Feasibility of an International Instrument for Tobacco Control" (EB97/ INF. DOC.4)).

During that same session, the Executive Board adopted Resolution EB97.R8, "International Framework Convention for Tobacco Control." The objective of this Convention and its protocols was to protect present and future generations from the devastating health, social, environmental and economic consequences of tobacco consumption and exposure to tobacco smoke by providing a framework for tobacco control measures to be implemented by the Parties at the national, regional and international levels in order to reduce continually and

substantially the prevalence of tobacco use and exposure to tobacco smoke. The FCTC in particular has been a global galvanizing force for the past decade, serving, as its name implies, as a framework and road map for global tobacco control efforts. In some cases, guided by the FCTC frameworks, focus is required on increasing certain activities, policies, or interventions and, in other cases, reducing certain activities, policies, or interventions.

TOBACCO CESSATION IN SPECIAL POPULATIONS

Many factors could potentially affect the choice, delivery, and efficacy of tobacco dependence treatments. For instance, should interventions be tailored or modified on the basis of gender, race/ethnicity, age, co-morbidity, or hospitalization status? Should pregnant smokers receive pharmacotherapy? Do tobacco dependence interventions interfere with other chemical dependency treatments?^[32]

Pregnant patients - Because of the serious risks of smoking to the pregnant smoker and the fetus, whenever possible pregnant smokers should be offered extended or augmented psychological interventions that exceed minimal advice to quit. Although abstinence early in pregnancy will produce the greatest benefits to the fetus and expectant mother, quitting at any point in pregnancy can yield benefits. Intensive counseling interventions increase quit rates during pregnancy. If intensive counseling is not possible, brief in-office counseling still has a beneficial effect and should be offered. Pregnant women and parents with children living at home also should be counseled on the potentially harmful effects of smoking on fetal and child health.

Breastfeeding women - Smoking leads to a significant reduction in breast milk volume and increases the likelihood of early discontinuation. Data support the use of bupropion plus NRT in nursing mothers, with increased cessation rates. Additionally, eliminating environmental exposure to the infant is a favorable outcome.

Racial and Ethnic Minorities - Smoking cessation treatment has been shown to be effective across both racial and ethnic minorities. However, little research has examined any intervention specifically designed for a particular ethnic or racial group; Thus, it is recommended that, when possible, smoking cessation treatment should be tailored to the specific ethnic or racial population with which they are used. It is also essential that counseling or self-help materials be conveyed in a language understood by the smoker.

Psychiatric co-factors - If presence of psychiatric co-factors, such as depression, eating disorder, anxiety disorder, attention deficit disorder, or alcohol abuse is sensed, strongly consider referral to intensive counseling. Treatment of co-factors must be undertaken in preparation for smoking cessation.

Non-cigarette tobacco users - Spit tobacco users should be identified and strongly urged to quit tobacco use, using the same counseling interventions recommended for smokers. The clinicians should provide a clear message that the use of spit tobacco is not a safe alternative to smoking. Users of cigars, pipes, and other non-cigarette combustible forms of tobacco should be identified, strongly urged to quit, and offered the same counseling interventions recommended for smokers.

Gender concerns - Smoking cessation treatments are shown to benefit both women and men irrespective of their genders. Women may face different stressors and barriers to quitting (e.g., greater likelihood of depression, greater weight control concerns, and hormonal cycles). This research suggests cessation programs that address these issues would be more effective in treating women.

Older smokers - Smoking cessation in older smokers can reduce the risk of myocardial infarction, death from coronary heart disease, and lung cancer. Abstinence can also promote more rapid recovery from illnesses that are exacerbated by smoking and can improve cerebral circulation. Smoking cessation treatments have been shown to be effective for older adults and should be provided, as cessation improves pulmonary function and cerebral circulation. Supportive counseling and social support may be of more value to prevent relapse than education or skills training.

Children and Adolescents - Children and adolescents who are active smokers have an increased prevalence and severity of respiratory symptoms and illnesses, decreased physical fitness, and potential retardation of lung growth. Adolescents are interested in quitting, but may have to make more quit attempts before being successful compared to adults. Clinicians should ask pediatric and adolescent patients about tobacco use and provide a strong message regarding the importance of totally abstaining from tobacco use. Counseling has also been shown to be effective in treatment of adolescent smokers. Cessation counseling delivered in pediatric settings has been shown to be effective in increasing abstinence among parents who

smoke. Anti-tobacco messages should be included in all health promotion counseling of children, adolescents, and young adults.

Hospitalized smokers - Providing hospitalized patients with high-intensity behavioral counseling and follow-up of at least 30 days has been shown to increase cessation rates. NRT supplementation can also be useful in this population. Briefer interventions (<20 minutes, delivered only during the hospitalization) have not yet been shown to be helpful. Additional treatment can include self-help brochures or audio/video tapes; chart prompts reminding physicians to advice for cessation, pharmacological therapy, hospital counseling, and post-discharge counseling telephone calls.

CONCLUSION

Tobacco imposes a colossal burden of disease and death leading to catastrophic health, social, economic and environmental effects. Prevalence and practices of tobacco use in India are varied and disparate. Tobacco consumption continues to grow at 2–3% per annum, and by 2020 it is predicted that it will account for 13% of all deaths in the country.^[1]

Tobacco dependence displays many features of a chronic disease. Only a minority of tobacco users achieve permanent abstinence in an initial quit attempt. The majorities of users persist in tobacco use for many years and typically cycle through multiple periods of remission and relapse. A failure to appreciate the chronic nature of tobacco dependence impedes clinicians' consistent assessment and treatment of the tobacco user over time.

Modern approaches to treating tobacco use and dependence should reflect the chronic nature of tobacco dependence. A chronic disease model recognizes the long term nature of the disorder with an expectation that patients may have periods of relapse and remission. If tobacco dependence is recognized as a chronic disease, clinicians will better understand the relapsing nature of the condition and the requirement for ongoing, rather than just acute care.^[33]

Effective interventions exist that can produce long-term cessation at up to double the rate achieved by smokers without treatment. It is important for clinicians to know that assessing and treating tobacco use generally leads to greater patient satisfaction with health care. Members of the dental profession have a unique opportunity to influence tobacco use by their patients.

In view of the presented evidence, there is now a need to mobilize financial and human resources for the application of the various methods and interventions for tobacco control. Continuous efforts should be made to establish national and international coordinating mechanisms to integrate tobacco control into health and development.

REFERENCES

1. Collective expert report. Tobacco understanding dependence in order to act. Summary and Recommendations. INSERM. 2002-03.
2. Puscinkar E, Gonecka D. Tobacco smoking and the fight against tobacco addiction: A look at Iran and the other countries of the Persian Gulf Region. *Pneumonol Alergal Pol*, 2011; 79: 1-2.
3. Jettle AM, Feldman HA, Tennsladt SL. Tobacco use: A modifiable risk factor for dental disease among the elderly. *Am J Pub Health*, 1993; 9: 1271-76.
4. Giannopolou C, Gernoz A, Cimasoni G. Effects of nicotine on periodontal ligament fibroblasts in vitro. *J Clin Periodontol*, 1999; 26: 49-55.
5. Benowitz NL. Nicotine Addiction. *N Engl J Med*, 2010; 362: 2295-2303.
6. Jha, P., F. J. Chaloupka. "Tobacco Addiction." In *Disease Control Priorities in Developing Countries*, 2nd ed. Oxford university Publication.
7. Kuscano WG et al. Electronic Cigarettes and third hand tobacco smoke: two emerging health care challenges for the primary care provider. *Int J Gen Med*, 2011; 4: 115-20.
8. Peto R et al. Mortality from smoking worldwide. *Br Med Bull*, 1996; 52: 12-21.
9. Charlton A. Medicinal Uses of tobacco in history. *J R Soc Med*, 2004; 97: 292-96.
10. Lewis KE. Smoking cessation: Past, Present and future. *Egyptian J Bronchol*, 2008; 2: 186-96.
11. Jones RB. Tobacco or Oral health. *J Am Dent Assoc* 2000; 131: 1130-36.
12. Crane J, Blakely T, Hill S. Time for major roadwork's on the tobacco road? *NZ Med J*, 2004; 117: 801-04.
13. Chapman S, Meckenzie R. The global research neglect of unassisted smoking cessation: causes and consequences. *Plos Medicine*, 2010; 7: 216-22.
14. Shiffman et al. Use of smoking cessation treatments in the US. *Am J Prev Med*, 2008; 34: 102-111.
15. Larabie LC. To what extent smokers plan quit attempts. *Tob Control* 2005; 14: 425-28.
16. Wu P, Wilson K. Effectiveness of smoking cessation therapies. A systematic review and meta analysis. *BMC Pub Health*, 2000; 6: 30.

17. Mills JE et al. Efficacy of pharmacotherapies for smoking abstinence: A systematic review and meta analysis. *Harm Red J*, 2009; 6:25.
18. Mohammad A. An overview of pharmacological aids available to enhance smoking cessation. *Asia Pacific Family Med*, 2004; 3: 13-17.
19. Biological basis of tobacco addiction: Implications for smoking cessation treatments. *Indian J Psychiatry*, 2010; 52: 301-08.
20. Frishman W. Smoking cessation pharmacotherapy- Nicotine and Non-Nicotine Preparations. *Prev Cardiology*, 2007; 10: 10-22.
21. Tsoi DT, Porwal M, Webster A. Efficacy and Safety of smoking cessation and reduction in schizophrenia. *BJP*, 2010; 196: 346-53.
22. Essawy AE. Pharmacological treatment of smoking cessation. *Egyptian J Bronchol*, 2010; 4: 132-142.
23. Hughes J. An algorithm for choosing among smoking cessation treatments. *J Sub Abuse Treatment*, 2008; 34: 426-432.
24. Gonzales D et al. Immediate vs Delayed quitting and rates of relapse among smokers treated successfully. *Addiction*, 2010; 105: 2002-13.
25. Baumeister RF, Vohs KD, Tice DM. The strength model of self control. *Psychol Science*, 2007; 16: 6-11.
26. Muraven M, Baumeister RF. Self regulation and depletion of limited resources: Does self control resemble a muscle? *Psychol Bull*, 2000; 126: 247-59.
27. Baumeister RF, Vohs KD, Tice DM. The strength model of self control. *Current Direction. Psychol Science*, 2007; 16: 351-355.
28. Murraven M. Practicing self control lowers the risk of smoking lapse. *Psychol Addict Behav*, 2010; 24: 446-52.
29. Tobacco free initiative manual for general public. Tobacco Cessation Centre, NIMHANS, Bangalore, 2009.
30. Tobacco cessation manual for primary care physicians, nurses and health workers. PGIMER, Chandigarh, India, 2011.
31. A.K.Verma. Tobacco counters Health. World Assembly on Tobacco counters Health (WATCH). Mac Millan, 2001; 144-151.
32. Fiona MC et al. Treating tobacco use and dependence. US Department of health and human services, 2008.
33. Jandoo T, Mehrotra R. Tobacco control in India: present scenario and challenges ahead. *Asian Pacific J Cancer Prev*, 2008; 9: 805-10.